

## AUTHOR REFLEXIVITY STATEMENT

### 1. How does this study address local research and policy priorities?

The research questions emerged directly through discussions with doctors and policymakers, at the conclusion of an earlier study on inappropriate prescribing of antimicrobials in Pakistan and Cambodia. It was particularly highlighted by regulators that conflicts of interest impacting medical decisions are a pervasive force, but remain neglected, underestimated, and overlooked as an issue. There was a stated need for more evidence on how to address the 'softer' components of the healthcare system, such as the drivers of, or impediments to, ethical medical practice. Thus, in this study, we investigated conflicts of interest in relation to antimicrobial use in Cambodia, Indonesia, and Pakistan, and the challenges to regulate unnecessary use of medicines more broadly. In each of these countries, regulatory challenges relating to antimicrobial use are evident, and are high on the policy agenda. Each of these three country settings, despite their obvious diversity, share a set of health policy and systems dynamics, which exacerbate the risk of conflicts of interest in healthcare provision, such as a dominant for-profit healthcare sector, a robust pharmaceutical industry, and limited governance capacity. In filling a gap in the evidence base on conflicts of interest, this study is an important stepping-stone in understanding how conflicts of interest can manifest in the policy process. It further sheds light on a variety of factors and connections between key stakeholder groups that impede effective policies to improve the quality of healthcare in our focus countries, including how issues reach the policy agenda in the first place, with important take-aways for further research and investigation in other settings.

### 2. How were local researchers involved in the study design?

Our study is based on data from linked studies conducted by the authors in Cambodia, Indonesia, and Pakistan. In each country, the design of questions, data collection and analysis were co-led by local researchers fluent in the local language(s) (SB, SC, SH, SP, CP, VP and SS in Cambodia; AP and LPLW in Indonesia; and MK and RH in Pakistan); this ensured a native understanding of the country's socio-political, health, and economic contexts. Some of these local researchers bridged settings and institutions (LPLW in Indonesia and Australia; and MK, RH in Pakistan and the UK), bringing their extensive experience as both local and non-local researchers in leading and managing international research collaborations between high-income and lower-income countries.

### 3. How has funding been used to support the local research team?

In this study, we analysed data that had been collected for linked studies, one of which was funded by the UK Medical Research Council, and one was funded by the Australian Department of Foreign Affairs and Trade. The funding from these 'parent' studies was used to fund salaries for the local research teams, costs for data collection led by the local team, translation and management, and dissemination of findings by the local researchers.

### 4. How are research staff who conducted data collection acknowledged?

Researchers involved closely in data collection and analysis – as identified by the research team in each country – are co-authors on this paper. We further explain in the section titled 'Study objectives and setting' that the study is based on data from linked studies conducted by the authors in Cambodia, Indonesia, and Pakistan respectively. This is one way we have acknowledge the researchers who conducted the original data collection. To synthesise and analyse the data from these linked studies, but for the purposes of our study, we recognize the contributions of MK, ARS, and LPLW in the section titled 'Approach to data analysis', as they developed the coding framework used to chart data from the three different datasets.

### 5. Do all members of the research partnership have access to study data?

All members of the partnership have access to the study data.

**6. How was data used to develop analytical skills within the partnership?**

Through a process of multiple rounds of collaborative analysis, we learnt from each other by seeing how colleagues interpreted the raw data drawing similar or different insights. At the writing stage, researchers based in Pakistan, Cambodia and Indonesia were able to enhance skills of high-income country colleagues with respect to sensitively summarising findings on a controversial topic. We also developed the analytical skills of the pre-doctoral early career researchers (ARS and SS) through training on framework analysis; they had not previously been involved in the three linked studies from where the data originated and was able to gain experience in meta-ethnography through this study.

**7. How have research partners collaborated in interpreting study data?**

All researchers – both local and non-local – critically reviewed and evaluated the coding framework and approach to charting the data, as well as the outputs from the analysis. All researchers (bar ARS) had conducted separate analyses of the respective datasets to address different research aims and objectives (results of which have been previously published, see references 16, 17, and 40). The local research teams (namely VP, SS, MK, RH, AP, LPLW, VW) helped to shape the analysis plan outlined by MK and ARS, and further inputted at several points in the process of analysing, interpreting and reporting on the study data, to ensure that the interpretation of the study data was accurate/appropriate and contextualized within the country setting. Based on written and verbal (remote meetings) feedback, we refined the presentation of the study data and phrasing of the key findings in the manuscript, including to address concerns or sensitivities that were raised owing to the subject matter. This is why, for example, the names of certain policy bodies and regulatory agencies have been redacted. Each of the key findings, and how they were explained in the manuscript, were shaped by the local research teams before being included to ensure that the interpretation matched their knowledge and understanding of the issue within their own country or institutional settings.

**8. How were research partners supported to develop writing skills?**

The research team involved in this study is predominantly composed of senior and mid-career academics. The pre-doctoral early career researchers (ARS and SS) involved in the core research and writing activities in this study were supported by the senior academics (namely MK, JH, RH, VP, VW, LPLW and AP) to develop and refine their writing skills, as well as their skills leading and coordinating the development of a manuscript. Authors who work less closely with policymakers, developed skills on how to sensitively convey findings on this controversial topic.

**9. How will research products be shared to address local needs?**

In addition to having this study published as open access, local teams will verbally share findings with key policymakers struggling to address the regulatory challenges posed by conflict of interest. The research team will coordinate to further socialise the key findings via different academic and non-academic channels (and in Khmer, Bahasa, and Urdu). We have also made a short video to raise awareness of conflicts of interest impacting clinical decisions, in order to start gaining buy-in from stakeholders that this issue needs to be addressed by regulators.

**10. How is the leadership, contribution and ownership of this work by LMIC researchers recognised within the authorship?**

Researchers involved closely in data collection and analysis – as identified by the research team in each country – are co-authors on this paper. The data is co-owned by and held by the relevant LMIC institutions, and the researchers involved are able to use it for further analysis, teaching or other non-commercial purposes. As mentioned, this study is based on an analysis of data from three linked studies, and each of the

local research teams have been first or last authors on separate publications that use the respective 'parent' datasets (see references 16, 17, and 40). MK and JH (first and last author) were involved across all three studies and were therefore put forward to lead this synthesis. To recognise the substantial work put in by ARS, an early career researcher, in translating key constructs between the three linked studies once the complex analysis was underway, she was put in as joint first author.

**11. How have early career researchers across the partnership been included within the authorship team?**

Please see final sentence in answer no 10. There five pre-doctoral early career researchers who are included in the authorship team (ARS, SC, SH, SP, CP). Each of them played a key role, either in conducting one of the original studies (SC, SH, SP, CP), or in synthesising and analysing the three datasets combined and developing the manuscript for the purposes of this study (ARS).

**12. How has gender balance been addressed within the authorship?**

Three authors are male (SB, SH, VP) and 12 authors are female (MK, ARS, SC, ADB, RH, SP, CP, AP, SS, VW, LPLW, JH). We acknowledge that the gender balanced in tipped in favour of females; this reflects the fact that the Principal Investigators (PIs) of 'parent' studies were female (VW and MK) and that the Pakistan and Indonesia based PIs were also female.

**13. How has the project contributed to training of LMIC researchers?**

Through structured experience of how to collaboratively analyse qualitative data, apply a framework analysis approach, and the process of multiple iterations to agree on appropriate wording for key concepts in the manuscript.

**14. How has the project contributed to improvements in local infrastructure?**

The project has not directly contributed to improvements in local infrastructure.

**15. What safeguarding procedures were used to protect local study participants and researchers?**

As a synthesis of publicly available datasets, there was no primary data collection as part of this study, therefore this question is not directly applicable. For the three linked studies, from which this study data is derived, ethics approval was sought by the respective institutions involved and is declared in referred-to publications authored by the research teams (see references 16, 17, and 40).